

RUSS AUGUST & KABAT

Marc A. Fenster, CA SBN 181067
mfenster@raklaw.com
Reza Mirzaie, CA SBN 246953
rmirzaie@raklaw.com
Kristopher R. Davis, CA SBN 329627
kdavis@raklaw.com
James N. Pickens, CA SBN 307474
jpickens@raklaw.com
Minna Y. Chan, CA SBN 305941
mchan@raklaw.com
Jason M. Wietholter, CA SBN 337139
jwietholter@raklaw.com
12424 Wilshire Boulevard, 12th Floor
Los Angeles, California 90025
Tel: 310/826-7474
Fax: 310/826-6991

Attorneys for Defendant/Counterclaim Plaintiff
ECOFACOR, INC.

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
OAKLAND DIVISION**

GOOGLE LLC,

Plaintiff/Counterclaim Defendant,

v.

ECOFACOR, INC.,

Defendant/Counterclaim Plaintiff.

Case No. 4:21-cv-03220-HSG

**DEFENDANT ECOFACOR, INC.'S
OPENING MARKMAN BRIEF**

DEMAND FOR JURY TRIAL

Date: July 22, 2022
Time: 1:30 pm
Courtroom: Courtroom 2 – 4th Floor
Judge: Hon. Haywood S. Gilliam, Jr.

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I. INTRODUCTION

Defendant EcoFactor, Inc. (“EcoFactor”) offers claim construction proposals that are consistent with the plain and ordinary meanings of the disputed claim terms, the teachings of the asserted patents, the understanding of a person of ordinary skill in the art (“POSITA”), and the law of claim construction and indefiniteness. These proposals should be adopted. In stark contrast, Plaintiff Google LLC (“Google”) offers proposals that directly contradict the intrinsic record. Google’s indefiniteness positions and proposed constructions conflict with Federal Circuit law and are unsupported by intrinsic evidence. For some disputed terms, Google seeks to import extraneous limitations into the claims without any legal basis. For others, Google apparently seeks to narrow the asserted claims by recharacterizing non-limiting preamble language as claim limitations. And for still others, Google raises meritless indefiniteness arguments that ignore the plain and ordinary meaning of the claims to a POSITA. Google’s litigation-driven proposals should be rejected.

II. RELEVANT LEGAL STANDARDS

Claim Construction: “[T]he claims themselves provide substantial guidance as to the meaning of [] terms.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005). Thus, when conducting a claim construction inquiry, “courts are not (and should not be) required to construe every limitation present in a patent’s asserted claims.” *O2 Micro Int’l v. Beyond Innovation Tech.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008). Where a term is used in accordance with its plain meaning, the court should not replace it with different language. *Thorner v. Sony Comp. Ent. Am. LLC*, 669 F.3d 1362, 1366-67 (Fed. Cir. 2012) (“We do not read limitations from the specification into claims; we do not redefine words. Only the patentee can do that.”); *ActiveVideo Networks, Inc. v. Verizon Commc’ns, Inc.*, 694 F.3d 1312, 1326 (Fed. Cir. 2012) (“The district court did not err in concluding that these terms have plain meanings that do not require additional construction. ... [T]he district court properly rejected [the proposed] construction and resolved the dispute ...”).

There is a “**heavy presumption**” that claim terms carry their “full ordinary and customary meaning, unless [the accused infringer] can show the patentee **expressly relinquished** claim scope.” *Epistar Corp. v. ITC*, 566 F.3d 1321, 1334 (Fed. Cir. 2009).¹ “There are **only two**

¹ All emphasis in quoted material has been added unless otherwise noted.

1 **exceptions**” that overcome this presumption: “1) when a patentee sets out a definition and acts as
 2 his own **lexicographer**, or 2) when the patentee **disavows** the full scope of a claim term either in
 3 the specification or during prosecution.” *Thorner*, 669 F.3d at 1365. Otherwise, courts “do not
 4 import limitations into claims from examples or embodiments appearing only in a patent’s written
 5 description.” *JVW Enters., Inc. v. Interact Accessories*, 424 F.3d 1324, 1335 (Fed. Cir. 2005). A
 6 statement during prosecution does not limit claims unless it is a “clear and unambiguous disavowal
 7 of claim scope.” *Omega Eng’g, Inc v. Raytek Corp.*, 334 F.3d 1314, 1325 (Fed. Cir. 2003). After
 8 considering intrinsic evidence (claims, specification, prosecution history), “[e]xtrinsic evidence
 9 may also be considered, if needed to assist in determining the meaning or scope of technical terms
 10 in the claims.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996).

11 **Indefiniteness:** “[A] patent is invalid for indefiniteness if its claims, read in light of the
 12 specification delineating the patent, and the prosecution history, fail to inform, with **reasonable**
 13 **certainty, those skilled in the art** about the scope of the invention.” *Nautilus, Inc. v. Biosig*
 14 *Instruments, Inc.*, 572 U.S. 898, 901 (2014). “The definiteness requirement, so understood,
 15 mandates clarity, while recognizing that **absolute precision is unattainable**.” *Id.* at 910. Because
 16 “[a] patent is presumed valid under 35 U.S.C. § 282,” any defense of indefiniteness must be proven
 17 “by **clear and convincing evidence**.” *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374,
 18 1377 (Fed. Cir. 2015). This burden falls on the accused infringer. *See Tech. Licensing Corp. v.*
 19 *Videotek, Inc.*, 545 F.3d 1316, 1327 (Fed. Cir. 2008). The law is also clear that “breadth is not
 20 indefiniteness.” *BASF Corp. v. Johnson Matthey Inc.*, 875 F.3d 1360, 1367 (Fed. Cir. 2017). And
 21 notably, “patent documents need not include subject matter that is known in the field of the
 22 invention and is in the prior art, for patents are written for persons experienced in the field of the
 23 invention.” *S3 Inc. v. NVIDIA Corp.*, 259 F.3d 1364, 1371 (Fed. Cir. 2001) (“To hold otherwise
 24 would require every patent document to include a technical treatise for the unskilled reader.”).

25 **III. BACKGROUND OF PRIOR CLAIM CONSTRUCTIONS**

26 The parties have completed claim construction in three prior litigations involving other
 27 EcoFactor patents, several of which are related to and/or include claim elements found in the
 28 patents asserted here: (1) Case No. 6:20-cv-00075 (W.D. Tex.) (“-00075 Action”); (2) ITC Inv.

No. 337-TA-1185 (“1185 Investigation”); and (3) ITC Inv. No. 337-TA-1258 (“1258 Investigation”). The experts relied upon by Google and EcoFactor here (Dr. David Auslander and Mr. Robert Zeidman, respectively) previously opined on claim construction issues in the 1258 Investigation, and Mr. Zeidman also offered claim construction opinions in the -00075 Action.

Dr. Auslander and Mr. Zeidman also recently offered claim construction opinions in a district court action between EcoFactor and ecobee, Inc. (“ecobee”), Case No. 6:22-cv-00428 (W.D. Tex.) (“ecobee Action”). The ecobee Action involves the same four patents asserted here.

IV. BACKGROUND OF THE TECHNOLOGY

As Mr. Zeidman explains in his supporting report (Ex. A), the asserted patents generally relate to the control of HVAC systems and promoting efficient energy consumption. *E.g.*, Zeidman Rpt. ¶¶ 17-27. HVAC systems consume significant energy when they run, so reducing the time over which a system must run in order to keep the user comfortable will save energy. Also, HVAC equipment can be damaged by what is commonly referred to as “rapid cycling” or “short cycling,” which occurs when equipment cycles off (e.g., AC stops cooling) but very soon thereafter cycles back on (e.g., AC starts cooling), resulting in inefficient energy usage and potential equipment damage. Further, detecting a user’s manual temperature setting changes was difficult for traditional thermostat systems. The asserted patents address these and other problems by providing solutions that promote energy efficiency while still accounting for user comfort and preferences.

V. LEVEL OF ORDINARY SKILL IN THE ART

A POSITA at the time of the invention² would have had (1) a bachelor’s degree in engineering, computer science, or a comparable field of study, and (2) at least 2-3 years of professional experience in temperature controls, embedded control systems, electronic thermostats, or HVAC controls, building energy management and controls, or other similarly relevant industry experience. Zeidman Rpt. ¶ 28. Additional relevant industry experience may compensate for lack of formal education or vice versa. *Id.*

Google contends a POSITA would need five years of experience to have “ordinary” skill

² Each patent is entitled to its earliest claimed priority date. Dr. Auslander suggests they may be entitled only to their filing dates but admits his opinions would not change if EcoFactor’s position were accepted. Auslander Decl. ¶¶ 36-39. This Court need not decide on priority dates at this time.

and that the relevant field should be limited only to “building energy management and controls.” Auslander Decl. ¶ 35. To the contrary, two years would be sufficient, and the field should include temperature controls, embedded control systems, electronic thermostats, and HVAC controls for residential environments. *E.g.*, Zeidman Rpt. ¶ 28; ’890 patent at 2:65-3:57 (describing need for improvements to “residential HVAC control”), 8:52-9:4 (thermostat 108 includes “a microprocessor 254, memory 256, a display 258, a power source 260, a relay 262,” network connectivity, “controls 266”), Figs. 1, 2, 4. Notably, EcoFactor’s proposal is consistent with the findings of the 1258 Investigation, where Google’s proposal was rejected. *See* Ex. B at 7-8.

VI. DISPUTED CLAIM TERMS³

A. “predicted rates of change” terms (’100 patent, claims 1, 9; ’186 patent, claims 1, 8; ’597 patent, claims 1, 9, 17)

EcoFactor’s Proposed Construction	Google’s Proposed Construction
“rate of change”/“rate of change of temperatures inside the structure”/“rates of change in temperature”: difference between inside temperature measurements divided by the span of time between the measurements Remainder of phrases or other phrases: No construction necessary; plain and ordinary meaning.	Calculate a future rate of change in temperature without using actual values that have been obtained currently or in the past

Google’s proposed construction is unsupported by law or intrinsic evidence. It is a transparent attempt to avoid infringement by adding a negative limitation to every claim of three asserted patents—a limitation that is not only baseless but also directly conflicts with the claims and the specifications. Google’s proposal should be rejected. *See* Zeidman Rpt. ¶¶ 29-54.

As an initial matter, EcoFactor’s proposal is consistent with decisions of other courts, including on these same patents. For example, in the *ecobee* Action, the Western District of Texas court found—as the parties there agreed—that “rate of change of temperatures inside the structure” (and its variants) means “difference between inside temperature measurements divided by the span of time between the measurements,” specifically as to the ’100, ’186, and ’597 patents. *See* Ex. C (*ecobee* JCCS) at 1. The Texas court also adopted this same construction in the -00075 Action. *See* Ex. Q (-00075 Constructions). Google also agreed to this same construction in the 1258 Investigation—and did not seek to construe the modifier “predicted.” *See* Ex. R (1258 JCCC) at

³ Agreed constructions are set forth in the Joint Claim Construction Statement (Dkt. No. 70).

1 1. And in the 1185 Investigation, the ALJ similarly construed the term to have its “plain and
 2 ordinary meaning, an example of which is: ‘the difference between two temperature measurements
 3 divided by the span of time between the measurements.’” Ex. S (1185 ID) at 58. EcoFactor’s
 4 proposal here is consistent with these prior adjudications and party agreements regarding the
 5 meaning of this claim term. Google’s proposal is not.

6 Fundamentally, Google’s proposed construction is inconsistent with how a POSITA would
 7 understand the claims. Zeidman Rpt. ¶ 35. A POSITA would understand that using current or past
 8 values as inputs to the calculation of the predicted rate of change is consistent with the plain and
 9 ordinary meaning. *Id.* Indeed, the claims recite: (1) “using the stored data to predict a rate of change
 10 of temperatures” (e.g., 597 patent, cl. 17); (2) “using the stored data to predict rate of change” (e.g.,
 11 ’100 patent, cl. 1); or (3) a “database” that stores historical temperature data that is “accessed by
 12 the one or more server computers” that “calculate one or more predicted rates of change” (’186
 13 patent, cl. 1). Thus, temperature data available for use in calculating a predicted rate of change
 14 would include current temperature values or historical temperature values. Zeidman Rpt. ¶ 35.

15 Besides being an illogical reading of the claim language, Google’s proposal would exclude
 16 preferred embodiments disclosed in all three patents in which predicted rates of change are
 17 calculated using actual values, such as historical inside and outside temperature values. *See, e.g.,*
 18 Zeidman Rpt. ¶¶ 36-50; ’100 patent at 7:34-40, 7:60-9:47, Figs. 5-8; ’186 patent at 5:4-30, 7:62,
 19 8:21-9:9, 10:57-11:19, Figs. 5-11; ’597 patent at 4:34-40, 4:62-5:40, Figs. 5, 6. The portions of the
 20 specifications that Google offers as “supporting evidence” do not support Google’s position. For
 21 example, each patent discloses performing a calculation that uses historical data stored in database
 22 300 to predict the rate at which inside temperature should change for given inside and outside
 23 temperatures. *See, e.g.,* ’100 patent at 8:20-38; ’186 patent at 8:63-9:9; ’597 patent at 5:5-40;
 24 Zeidman Rpt. ¶ 51. In other words, the specifications disclose what Google seeks to exclude.

25 Beyond this, Google’s proposal is based on a disclaimer argument that was rejected by the
 26 ALJ in the 1258 Investigation. Google can come nowhere near showing that EcoFactor made a
 27 “*clear and unambiguous* disavowal of claim scope” during prosecution. *See Omega Eng’g*, 334
 28 F.3d at 1325. Google first identifies the entire file history of U.S. Patent No. 8,886,488, which is

not even asserted in this litigation. The only other prosecution history identified by Google is EcoFactor’s 11/27/2013 Response to Office Action during prosecution of the ’186 patent, but it does not support Google’s position. EcoFactor did not disavow the use of historical or current data to predict a rate of change, nor did it make any statement regarding the inputs to calculating a predicted rate. Rather, during prosecution, EcoFactor explained that a prior art reference “does not describe the concept of calculating one or more predicted rates of change in inside temperature measurements,” because it calculated only a *historical* value by “comparing existing measurements with previous measurements” and failed to disclose any analysis of historical data to make a *prediction* about the future. Ex. AA (11/27/2013 Resp. to O.A. in ’186 File History) at 8. Thus, EcoFactor distinguished between a past rate (not claimed) and a predicted rate (claimed). It did not disclaim—much less clearly and unambiguously—the use of current or historical values as inputs to calculating a predicted rate of change.

The Court should adopt EcoFactor’s proposal, which mirrors the “rate of change” construction from numerous prior cases and a current case involving the same patents at issue here. And there is no need to construe the remaining words and phrases identified by Google, which have plain and ordinary meanings. A POSITA would understand that a “predicted” rate of change is a rate of change that is forecasted or anticipated to occur in the future. Zeidman Rpt. ¶ 32. A POSITA would also understand that “calculate” refers to determining the predicted rate of change mathematically. *Id.* And a POSITA would understand that “at the first location” refers to the structure being conditioned by the HVAC system. *Id.* Such language does not require construction.

B. “in response to changes in outside temperature” terms (’186 patent, claims 1, 8; ’100 patent, claims 1, 9; ’597 patent, claims 1, 9, 17)

EcoFactor’s Proposed Construction	Google’s Proposed Construction
No construction necessary; plain and ordinary meaning.	Indefinite

Google’s indefiniteness argument is baseless. Google has spent nearly 2.5 years litigating other EcoFactor patents reciting nearly the same claim language that Google now says, for the first time, is so difficult to understand that every claim of the ’186, ’100, and ’597 patents must be held indefinite. Google never raised such an argument in the 1185 Investigation, despite asserted claim 1 of U.S. Patent No. 8,498,753 reciting “rate of change of temperature in said structure **in response**

1 **to changes** in outside temperatures.” Nor did Google raise this argument in the 1258 Investigation,
 2 despite asserted claims 9 and 17 of U.S. Patent No. 8,596,550 reciting “predict a rate of change of
 3 temperatures inside the structure **in response to at least changes** in outside temperatures.” To the
 4 contrary, Google argued in each case that prior art anticipates this limitation. For example, Dr.
 5 Auslander argued in the 1258 Investigation that one prior art reference discloses “changes in the
 6 recovery ramp rate **due to changes in outdoor temperature**” and that another discloses “predict
 7 a rate of change of change of temperatures in the structure in response to changes in outside
 8 temperature.” Ex. BB (1258 Tr.) at 917:5-6, 942:15-943:2. These statements (which EcoFactor
 9 does not concede are correct) directly contradict his present opinion that such claim language must
 10 be indefinite because a “rate” can never be in response to “changes in outside temperature.”
 11 Google’s apparent strategy now is to feign ignorance about the meaning of claim language it found
 12 clear for 2.5 years (and allegedly found in prior art) in hopes that EcoFactor will make statements
 13 that Google can use to support its prior art case. Google is wasting party and judicial resources.

14 A POSITA would understand the scope and meaning of each challenged claim term,
 15 particularly in light of the surrounding claim language and the intrinsic record. *See* Zeidman Rpt.
 16 ¶¶ 55-63. Because these claim terms provide reasonable certainty to a POSITA, they are not
 17 indefinite. For example, each patent discloses systems and methods for modeling how inside
 18 temperature changes in response to changes in outside temperature—and the patents demonstrate
 19 that this relationship can be expressed mathematically and graphically. *Id.* ¶ 56. The patents also
 20 disclose predicting how the use of air conditioning and the thermal mass of the home also influence
 21 inside temperature changes in response to changes in outdoor temperature. *Id.* For example:

22 Because server 106 logs the temperature readings from inside each house (whether
 23 once per minute or over some other interval), as well as the timing and duration of
 24 air conditioning cycles, database 300 will contain a history of the thermal
 25 performance of each house. That performance data will allow the server 106 to
 26 calculate an effective thermal mass for each structure—that is, the **speed with
 27 [which] the temperature inside a given building will change in response to
 28 changes in outside temperature**. Because the server will also log these inputs
 against other inputs including time of day, humidity, etc. the server will be able to
 predict, at any given time on any given day, the **rate at which inside temperature
 should change for given inside and outside temperatures**.

* * *

For example, FIG. 6a shows a graph of inside temperature, outside temperature and HVAC activity for a 24 hour period. **When outside temperature 302 increases, inside temperature 304 follows**, but with some delay because of the thermal mass of the building, unless the air conditioning 306 operates to counteract this effect. When the air conditioning turns on, the inside temperature stays constant (or rises at a much lower rate or even falls) despite the rising outside temperature. In this example, frequent and heavy use of the air conditioning results in only a very slight temperature increase inside of the house of 4 degrees, from 72 to 76 degrees, despite the **increase in outside temperature from 80 to 100 degrees**. FIG. 6b shows a graph of the same house on the same day, but assumes that the air conditioning is turned off from noon to 7 PM. As expected, the **inside temperature 304a rises with increasing outside temperatures 302** for most of that period, reaching 88 degrees at 7 PM.

'100 patent at 7:60-8:38, Fig. 6. The '186 and '597 patents include similar disclosures, such as the description of calculating the “speed with [which] the temperature inside a given building will change in response to changes in outside temperature.” See '186 patent at 8:21-9:9, 10:57-11:19, Figs. 6-11; '597 patent at 4:62-5:40, Fig. 6; Zeidman Rpt. ¶¶ 42-50.

Despite having no prior difficulty understanding such claim language in the parties' earlier cases—and despite asserting that prior art anticipates this very claim limitation—Dr. Auslander now asserts that no POSITA could reasonably understand these claim terms. The only supporting evidence he and Google cite is a dictionary describing Newton's law of cooling. Auslander Decl. ¶ 85. According to Dr. Auslander, “[a] POSITA would have understood from Newton's law of cooling that rates of change in inside temperature depend on the difference between inside and outside temperatures, which is itself based on an inside temperature value and an outside temperature value, not any change in outside temperature.” *Id.* ¶ 86. As the challenged patents explain, outside temperature impacts inside temperature. And by the same token, changes in outside temperature impact how inside temperature changes. With reference to Figure 6a, the '100 patent explains that “[w]hen outside temperature 302 **increases** [i.e., changes], inside temperature 304 follows.” '100 patent at 8:3-19. The patent even describes a specific example in which the outside temperature changes from 80 to 100 degrees, which results in changes to the inside temperature unless the air conditioning system is run to counteract the inside temperature increase induced by the outside temperature increase. See *id.*; see also '597 patent at 5:5-40 (same).

Dr. Auslander asserts that “even if the outside temperature changes over time, the rate that inside temperature changes would still only be in response to the actual present value of the outside

temperature, not the amount the outside temperature changes over time.” Auslander Decl. ¶ 86. This is wrong. At most, Dr. Auslander’s point is that the *current* or *instantaneous* rate of change is in response to the present value of the outside temperature. But the claims recite *predicting* the rate of change *over time*, and this *predicted* rate is in response to outside temperatures that will *change* over time. This is also taught in the specifications, which disclose “predict[ing]” the rate of change in inside temperatures in response to “changes in outside temperature” over time, such as an “increase in outside temperature from 80 to 100 degrees.” *E.g.*, ’597 patent at 5:5-40. Moreover, Dr. Auslander’s apparent view of the claims would exclude the preferred embodiment, further confirming it is wrong. *See SanDisk Corp. v. Memorex Prods.*, 415 F.3d 1278, 1285-86 (Fed. Cir. 2005) (constructions that exclude embodiments are “*rarely, if ever, correct*”). To the extent Google is suggesting that the claimed invention somehow violates scientific principles, that would not mean the scope of the claims is uncertain but instead would be an argument Google can raise in the context of written description, enablement, and/or non-infringement if it desires. Such an argument is even more incredible given that Google’s own expert, Dr. Auslander, wrote the foreword to EcoFactor’s 2007-2008 field study, where he stated that “thermal performance varies in predictable ways **in response to inputs such as outside temperature**” and EcoFactor later explained in the same report that “EcoFactor’s ability to learn how each connected home **responds to changes in outside temperature** and operation of its HVAC system under various conditions will allow us to predict how each home will react to known inputs” Ex. CC at Foreword, 30.

C. “measurements” terms (’100 patent, claims 1, 9; ’597 patent, claims 1, 9, 17; ’186 patent, claims 1, 8, 9)

EcoFactor’s Proposed Construction	Google’s Proposed Construction
No construction necessary; plain and ordinary meaning	Sensed readings of ambient temperature inside/outside a building

The word “measurements” would be readily understood by a POSITA or lay jury. It does not require construction, and there is no lexicography or disclaimer to support Google’s proposed departure from the term’s plain meaning. *Thorner*, 669 F.3d at 1365; *see* Zeidman Rpt. ¶¶ 64-69.

Notably, Google’s views on the scope of “measurements” have changed repeatedly over time. First, in the 1185 Investigation, Google did not seek any construction of “measurement”

despite that term appearing in claims of all four patents asserted there. Ex. T (1185 JCCC). Google even proposed several constructions containing “measurement.” *Id.* Next, in the -00075 Action, Google proposed that “measurement” be construed as “determination [of the claimed property] by an instrument by using standardized units.” Ex. U (-00075 JCCS). Google explained in its briefing that “any instrument that determines a property using standardized units is an instrument that takes a measurement.” Ex. V at 10. The court rejected Google’s proposal and declined to construe the term. Ex. Q. Then, in the 1258 Investigation, Google again did not seek any construction of “measurement” despite that term appearing in claims of all four asserted patents. *See* Ex. R (1258 JCCC). Google also agreed to multiple constructions containing the word “measurements.” *Id.* Until now, Google has never proposed a construction that refers to “sensed readings” or “ambient temperature.” These inconsistencies show that Google’s latest proposal is unprincipled.

A POSITA would understand what a “temperature measurement” is, and there is no legal basis to construe a term with such a plain and ordinary meaning. For example, measurement is “the process of determining the value of some quantity in terms of a standard unit,” which at least somewhat resembles Google’s proposal in the -00075 Action—as opposed to its latest proposed narrowing here. Ex. D (McGraw Hill Dictionary). A standard unit for temperature measurements is degrees Celsius or degrees Fahrenheit, as is commonly known. Zeidman Rpt. ¶ 65. Temperature measurements may be taken in various ways, such as by using digital temperature sensors or a mercury thermometer. *Id.* What defines “measurement” is determining the value of some quantity in terms of a standard unit. *Id.* As Mr. Zeidman explains, temperature can be “measured either by an empirical temperature scale, based on some convenient property of a material or instrument, or by a scale of absolute temperature, for example, the Kelvin scale.” *See id.* (quoting Ex. D).

Google’s newest, litigation-driven proposal appears intended to narrow the scope of the term to a “sensed reading.” But a POSITA would understand that a “measurement” is not limited to an individual data point from a piece of equipment. Instead, it also covers values determined after correcting for instrument error, accounting for noise, or otherwise improving the accuracy of the measurement process. *Id.* ¶ 66. For example, “temperature error” refers to instrument error resulting from the non-standard temperature of the instrument itself. *See* Ex. D (McGraw Hill). A

1 POSITA would readily understand issues such as these and would be familiar with temperature
 2 compensation techniques for improving individual readings into more accurate measurements that
 3 reduce or eliminate measurement error. Zeidman Rpt. ¶ 66. No further construction of
 4 “temperature measurement” is needed because its plain and ordinary meaning is already clear. *Id.*

5 Google’s proposal does not add clarity—if anything, it would introduce uncertainty by
 6 adding language such as “ambient.” It is already clear that “inside temperature” refers to the
 7 temperature inside the structure and “outside temperature” refers to the temperature outside the
 8 structure. *Id.* ¶ 67. The word “ambient” appears nowhere in the ’100 patent and appears only once
 9 in the Background section of the ’597 patent. And while the word appears a few times in the ’186
 10 patent, it is not used in any limiting fashion. In addition, the ’186 patent discloses using “additional
 11 temperature sensors at different locations within the building,” which “may allow increased
 12 accuracy of the system, which can in turn increase user comfort or energy savings.” ’186 patent at
 13 13:14-21. In that embodiment, the “ambient” temperature immediately surrounding each
 14 temperature sensor may differ because each sensor is in a different location, but a POSITA would
 15 nonetheless understand that the “inside temperature measurements” of the claimed inventions can
 16 correspond to any of the values obtained from these multiple temperature sensors or a combination
 17 of such values that represents, e.g., a weighted average inside temperature. *See* Zeidman Rpt. ¶ 67.

18 The word “ambient” similarly does not add clarity to “outside temperature measurements”
 19 because, for example, the ’186 patent discloses using an Internet weather service to receive outside
 20 temperature measurements for the geographic area containing the home being modeled (e.g., based
 21 on the home’s ZIP code). ’186 patent at 5:12-18; *see also* ’100 patent at Fig. 5 (weather database
 22 800); ’597 patent at Fig. 5 (same). Adding “ambient” here could introduce confusion by wrongly
 23 suggesting that the claims can be met only by using a temperature sensor mounted immediately
 24 outside the home, even though that is not the preferred embodiment and could be less accurate
 25 than it (e.g., due to changing sunlight). Zeidman Rpt. ¶ 67. The claims are broad enough to include
 26 using Internet weather services to obtain more accurate outside temperature values (still in standard
 27 units of degrees C or F) than would be provided by an individual outside temperature sensor. *Id.*

28 Google’s proposed addition of “sensed readings” is similarly unprincipled and suggests

that Google seeks to limit how measurements are obtained. It is not based on the intrinsic evidence and is inconsistent with Google’s own prior position that “any instrument that determines a property using standardized units is an instrument that takes a measurement.” Ex. V at 10.

The ’100, ’597, and ’186 patent specifications do not provide any definition (lexicography) supporting Google’s proposal, nor has Google identified any evidence that EcoFactor disclaimed scope to limit the claims as Google proposes (e.g., to overcome prior art). *See* Zeidman Rpt. ¶ 68. And as shown above, Google’s proposed construction seeks to exclude preferred embodiments from the scope of the claims—a result that would be contrary to law. *See, e.g., Thorner*, 669 F.3d at 1365; *Epistar*, 566 F.3d at 1334; *JVW Enters.*, 424 F.3d at 1335. It should be rejected.

D. “the HVAC control system” (’186 patent, claims 1, 8)

EcoFactor’s Proposed Construction	Google’s Proposed Construction
No construction necessary; plain and ordinary meaning; not means-plus-function and not subject to or governed by §112(6); not indefinite.	Subject to § 112 ¶ 6; indefinite for lack of structure; indefinite even if not subject to § 112 ¶ 6
In the alternative, if governed by §112(6), corresponding structure is server 106, thermostat 108, website 300, and/or combination of server 106, website 300, and/or thermostat 108	Recited functions: (1) “pre-cool[ing] the first structure” and (2) “reduc[ing] electricity demand”

Google raises multiple arguments, all of which should be rejected as inconsistent with the law and unsupported by the facts. *See* Zeidman Rpt. ¶¶ 70-84. Because this claim term would already connote clear structure to a POSITA, 35 U.S.C. § 112(6) does not apply—but even if it did, the ’186 patent discloses corresponding structure and thus is not indefinite. Google’s last-ditch argument that this term is indefinite even if § 112(6) does not apply is equally meritless.

1. “HVAC control system” is not subject to § 112(6), but even if it were, the specification discloses ample corresponding structure

Google’s first argument is that “HVAC control system” is subject to § 112(6). Not so. Because it does not “use the word ‘means’ [there is] a rebuttable presumption that § 112, ¶ 6 does not apply.” *Zeroclick, LLC v. Apple Inc.*, 891 F.3d 1003, 1007 (Fed. Cir. 2018). Thus, Google must show that this claim term “fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function.” *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015). Put another way, “if the limitation connotes sufficiently definite structure, it is not drafted in means-plus-function format, and §112¶6 does not

1 apply.” *Dyfan, LLC v. Target Corp.*, 28 F.4th 1360, 1365-66 (Fed. Cir. 2022). As the Federal
 2 Circuit recently explained, the “essential inquiry” is “whether the words of the claim are
 3 understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the
 4 name for structure.” *Id.* Google cannot overcome the presumption that § 112(6) does not apply.

5 An HVAC control system is a structural element, and a POSITA would understand this
 6 claim term to refer to structure. *See* Zeidman Rpt. ¶ 71. A POSITA would understand that an
 7 HVAC control system, such as a thermostat, is used to control an HVAC system, which supplies
 8 heating or cooling to a structure. *Id.* A server computer that is connected to a thermostat may also
 9 be an HVAC control system, as taught in the preferred embodiments of the asserted patents. As an
 10 example, a server computer may direct a thermostat to pre-cool a customer’s home prior to a period
 11 of expected high demand to reduce electricity demand during that period. *Id.*

12 As evidence that “HVAC control system” would be a familiar term to a POSITA—and not
 13 a “nonce” term implicating § 112(6)—*Google itself* regularly uses this exact phrase in its own
 14 patents. *See, e.g.*, Ex. E (U.S. Pat. No. 10,012,407) at cls. 1-10, 12, 14-16, 19-23, 25, 27, 29
 15 (Google patent reciting “**HVAC control system**” in over 20 claims); Ex. F (U.S. Pat. No.
 16 10,241,482) at cls. 13-24 (Google patent reciting “**HVAC control system**” in over 10 claims); Ex.
 17 G (U.S. Pub. No. 2016/0161138) at Title, cls. 2-21 (Google patent application reciting “**HVAC**
 18 **control system**” in title and all claims).

19 Dr. Auslander asserts these examples of Google using the exact phrase “HVAC control
 20 system” in its own patents should be disregarded because “[n]one of these documents existed as
 21 of the priority date of the ’186 patent, and all of the documents are therefore irrelevant.” Auslander
 22 Decl. ¶ 79. Dr. Auslander should have considered Google’s charted prior art references against the
 23 ’186 patent before leveling such a criticism, many of which include the exact phrase “HVAC
 24 control system” or very similar language. *See, e.g.*, Ex. W (Chart A-10) at 10 (“prepare the **HVAC**
 25 **control system** for the implementation of thermal mass control”); Ex. X (Chart A-20) at 1
 26 (“provides an **HVAC control system** that adapts”); Ex. Y (Chart A-13) at 1 (“equipped with a
 27 heating, ventilation, air conditioning (**HVAC**) **climate control system**”). Such examples show Dr.
 28 Auslander’s criticism is disingenuous. Google is relying upon prior art statements of “HVAC

control system” to show alleged anticipation or obviousness of “HVAC control system,” while arguing that “HVAC control system” is not a term of art (in support of its indefiniteness argument).

Dr. Auslander falsely claims that “[t]he term ‘HVAC control system’ is not a standard term of art in the industry.” Auslander Decl. ¶ 65. In fact, Dr. Auslander has previously opined that “HVAC control system” is a standard term of art. In a prior case involving U.S. Patent No. 7,243,004 (which has a 2004 priority date), he defined the level of ordinary skill using the exact phrase “HVAC control systems.” As the court’s opinion explains, “*According to Auslander*, the person of ordinary skill in the art is one ‘with a Bachelor’s degree in engineering and approximately two years of experience with *HVAC control systems*, plus experience and education or background in network, networking for controls and embedded control computing’ or ‘with some education, but not a Bachelor’s degree, and ten years [of] experience, along with similar networking and embedded computing.’” *Carrier Corp. v. Goodman Glob., Inc.*, 162 F. Supp. 3d 345, 375 (D. Del. 2016). This directly contradicts Dr. Auslander’s statement here that “‘HVAC control system’ is not a standard term of art in the industry.” Auslander Decl. ¶ 65. To the contrary, Dr. Auslander *defined the industry itself using this exact phrase*.

Shifting focus from Google’s inconsistencies, the intrinsic record demonstrates that “HVAC control system” recites sufficiently definite structure. Mr. Zeidman confirms that the class of known structures corresponding to “HVAC control system” includes (1) a programmable communicating thermostat, (2) a computer server that communicates programming to a connected thermostat, (3) a website that communicates programming to a connected thermostat or server, or (4) a combination of a programmable communicating thermostat, server, and/or website. *See* Zeidman Rpt. ¶ 72. Claim terms may describe a “class of structures” and still recite “sufficiently definite structure.” *Dyfan*, 28 F.4th at 1366. Further, “[i]ntrinsic evidence...can be informative in determining whether the disputed claim language recites sufficiently definite structure.” *Id.* The specification is replete with disclosures consistent with Mr. Zeidman’s understanding, such as:

- Figure 2 (architecture diagram depicting server 106 and thermostat 108)
- 1:22-26 (“communicating thermostats are combined with a computer network”)
- 3:45-63 (“cycling of the HVAC system is controlled by the thermostat ... control signals generated by the thermostat”)

- 3:66-4:3 (“at least one HVAC control system that measures temperature at least a first location conditioned by said HVAC system, and reporting said temperature measurements as well as the status of said HVAC system”)
- 3:64-5:3 (describing embodiments with “one or more processors” and one or more thermostatic controls that together evaluate operational efficiency of an HVAC system)
- 7:14-8:20 (describing HVAC control system that corresponds to “server 106 [which] contains content to be served as web pages and viewed by computers 104” and “website 200 [that] will permit thermostat users to perform through the web browser substantially all of the programming functions traditionally performed directly at the physical thermostat, such as temperature set points, the time at which the thermostat should be at each set point, etc.”)
- 8:21-30 (“In addition to using the system to allow better signaling and control of the HVAC system, which relies primarily on communication running from the server to the thermostat, the bi-directional communication will also allow the thermostat 108 to regularly measure and send to the server information about the temperature in the building. By comparing outside temperature, inside temperature, thermostat settings, cycling behavior of the HVAC system, and other variables, the system will be capable of numerous diagnostic and controlling functions beyond those of a standard thermostat.”)
- 9:45-10:5 (“Because the system will be able to calculate effective thermal mass, it will also be able to determine the cost effectiveness of strategies such as pre-cooling for specific houses under different conditions...the system will recommend that House A pre-cool in order to save money, but not recommend pre-cooling for House B [because of differences in thermal mass between House A and House B].”)

These disclosures are consistent with Mr. Zeidman’s opinion that an HVAC control system, from the perspective of a POSITA, can correspond to a programmable communicating thermostat, a computer server, a website, or a combination of such structures. A POSITA would understand how to combine such structures. *See* Zeidman Rpt. ¶ 80.

Thus, the term “HVAC control system” is not subject to § 112(6). However, even if the Court were to determine that it is, Google’s indefiniteness argument remains unfounded because, as discussed above, the specification discloses corresponding structure for accomplishing the “pre-cool[ing] the first structure” and “reduc[ing] electricity demand” functions identified by Google. For example, the disclosed thermostat, server, and website can work separately or in combination to adjust a temperature setpoint to pre-cool a user’s home in advance of a Demand Response event so that the HVAC system need not run during the high-demand period, thereby reducing electricity demand at that time. *See* Zeidman Decl. ¶¶ 71-72 (citing ’186 patent at 8:21-30, 9:45-10:5).

In its disclosure of “supporting evidence,” Google identifies only the Abstract and 3:64-5:5. These disclosures confirm to a POSITA that an HVAC control system that measures

1 temperature can correspond to a thermostat—a known structure. This supports EcoFactor’s
 2 proposal—not Google’s. Further, the sentence following Google’s citation confirms that the
 3 “invention comprises a thermostat attached to an HVAC system” and a “server in bi-directional
 4 communication” with the thermostat, further confirming that this is another example of a structure
 5 that corresponds to an “HVAC control system.” ’186 patent at 5:5-9.

6 Despite these clear teachings, Dr. Auslander asserts that, because the claims indicate that
 7 the one or more server computers determine whether to direct the HVAC control system to pre-
 8 cool and reduce electricity demand, this means that a server cannot be or be part of the HVAC
 9 control system. *See* Auslander Decl. ¶ 64. But a POSITA would understand that a server directs
 10 the entire HVAC control system (including both the server and its connected thermostat) to initiate
 11 the pre-cooling strategy. ’186 patent at 9:1-9, 9:45-10:5 (“system will recommend that House A
 12 pre-cool in order to save money, but not recommend pre-cooling for House B,” where the “system”
 13 refers to the “server 106a” that “calculate[s] effective thermal mass”); Zeidman Rpt. ¶ 72.

14 Similarly, Dr. Auslander argues that a thermostat cannot fall within the scope of “HVAC
 15 control system” because “the thermostat disclosed in the patents is conventional” and EcoFactor
 16 stated in its opposition to Google’s motion under 35 U.S.C. § 101 that the claims recite
 17 “unconventional electronic HVAC control systems.” *See, e.g.*, Auslander Decl. ¶ 70; Dkt. No. 48
 18 at 2. But the specification discloses an “HVAC control system that measures temperature,” which
 19 can refer to a thermostat. The point is that the claimed inventions utilize existing hardware (e.g.,
 20 programmable thermostats, server computers) in unconventional ways to improve the control of
 21 HVAC systems (e.g., to reduce electricity use during high-demand periods). By ignoring the
 22 substance of EcoFactor’s position on § 101, Dr. Auslander tries to suggest an inconsistency where
 23 none exists. He also argues that a thermostat cannot be within the scope of “HVAC control system”
 24 because dependent claims 3 and 5 require a programmable thermostat “as a separate component
 25 to the HVAC control system.” Auslander Decl. ¶ 70. This is irrelevant to claim 8 because claims
 26 3 and 5 depend from claim 1. Nor does it prove anything with respect to claim 1 because reciting
 27 “further comprising a programmable thermostat” with additional functionality (e.g.,
 28 “communicates with the Internet”) does not mean a thermostat must be outside claim 1’s scope.

2. Google's backup indefiniteness argument should be rejected

Google asserts that “HVAC control system” is still indefinite even if § 112(6) does not apply. Google is wrong. “HVAC control system” has a “commonly understood meaning” that is “generally viewed by one skilled in the art to connote a particular structure.” *See Williamson*, 792 F.3d at 1349; *Dyfan*, 28 F.4th at 1366. Indeed, Dr. Auslander uses the exact phrase “HVAC control systems” to describe this industry, despite his about-face assertion here that it is “not a standard term of art in the industry.” *Compare Carrier*, 162 F. Supp. 3d at 375, with Auslander Decl. ¶ 65.

Dr. Auslander's discussion of this backup argument largely rehashes his assertions about § 112(6), already addressed above. He does, however, also challenge the “and/or” appearing in EcoFactor's description of corresponding structure for the claimed functions, arguing that the multiple possibilities it presents is indicative of indefiniteness. *See Auslander Decl.* ¶ 77. But long-standing precedent makes clear that “a claim is not indefinite just because it is broad.” *Niazi Licensing Corp. v. St. Jude Med. S.C., Inc.*, 30 F.4th 1339, slip op. at 11 (Fed. Cir. 2022). The fact that “HVAC control system” can refer to three different components, alone or in combination, does not render the claims indefinite because the law is clear that “breadth is not indefiniteness.” *BASF Corp. v. Johnson Matthey Inc.*, 875 F.3d 1360, 1367 (Fed. Cir. 2017); *SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1341 (Fed. Cir. 2005) (same quotation).

E. “rapid cycling” ('890 patent, claim 1)

EcoFactor's Proposed Construction	Google's Proposed Construction
No construction necessary; plain and ordinary meaning.	Indefinite

Google contends claim 1 is invalid for indefiniteness because the scope of “rapid cycling” is not reasonably certain. This is belied by the frequent use of this term by Google and others. A POSITA would readily understand the scope of “rapid cycling” (sometimes referred to as “short cycling”), given the intrinsic evidence and knowledge of a POSITA. Zeidman Rpt. ¶¶ 85-91.

For example, the specification explains what rapid cycling is, how it can negatively impact the HVAC system and use energy inefficiently, and how thermostats often use a “hysteresis zone” or “dead zone” around a user's temperature setpoint, which helps protect against rapid cycling:

Because most thermostats control HVAC systems that do not offer infinitely variable output, traditional thermostats are designed to permit the temperature as seen by the thermostat to vary above and below the setpoint to **prevent the HVAC**

1 *system from constantly and rapidly cycling on and off*, which is inefficient and
 2 harmful to the HVAC system. The temperature range in which the thermostat
 3 allows the controlled environment to drift is known as both the *dead zone* and, more
 4 formally, the *hysteresis zone*. The hysteresis zone is *frequently set at +/-1 degree*
 Fahrenheit. Thus if the setpoint is 68 degrees, in the heating context the thermostat
 will allow the inside temperature to fall to 67 degrees before turning the heating
 system on, and will allow it to rise to 69 degrees before turning it off again.

5 '890 patent at 2:5-18. For a given home and HVAC system, the home's inside temperature will
 6 typically change after the HVAC system cycles off, and this is especially true if there is a
 7 significant difference between the inside temperature and outside temperature. Zeidman Rpt. ¶ 87.
 8 The patent explains that "[t]he greater the amount by which outside temperature exceeds inside
 9 temperature in the air conditioning context, the more rapidly the inside temperature will increase
 10 during an off cycle, and the slower the air conditioner will be able to cool during the on cycle."
 11 '890 patent at 20:24-28. The specification further describes how HVAC systems can also impose
 12 a compressor delay, including with a hysteresis zone. *See, e.g.*, '890 patent at 19:21-20:38.

13 In addition, the specification provides a series of examples in which compressor delays of
 14 varying lengths are used to protect against rapid cycling. *See* Zeidman Rpt. ¶ 88. For example, the
 15 specification describes a compressor delay of three minutes with respect to Figure 21a and a delay
 16 of eight minutes with respect to Figures 21b and 21c. *See, e.g.*, '890 patent at 19:46-20:35, Figs.
 17 20, 21a, 21b, 21c. Based on Dr. Auslander's criticism that the '890 patent "fails to define any
 18 objective amount of cycling that can be called 'rapid,'" Google's apparent position is that claim 1
 19 must provide numerical precision as to the length of compressor delay—which is contrary to law.
 20 *E.g., Niazi Licensing*, 30 F.4th 1339, slip op. at 11 ("True, descriptive words (or terms of degree)
 21 in a claim may inherently result in broader claim scope than a claim defined with mathematical
 22 precision. But a claim is not indefinite just because it is broad."); *Enzo Biochem, Inc. v. Applera*
 23 *Corp.*, 599 F.3d 1325, 1336 (Fed. Cir. 2010) ("claims are not indefinite even if some
 24 experimentation is required to determine the exact level of detection achieved"). And even though
 25 claim 1 is not limited to a specific amount of time that constitutes a "rapid cycling," disclosures
 26 such as those above provide guidance as to what may be a rapid cycle for a given HVAC system.

27 While the intrinsic evidence already provides ample clarity, it bears noting that there is no
 28 shortage of extrinsic evidence showing that a POSITA would readily understand this claim term.

1 In fact, *Google itself uses such terminology* in its patents and webpages. For example, “rapid
 2 cycling” and “short cycling” are commonly used in the field of HVAC control, including by smart
 3 thermostat providers like Google and ecobee. *See, e.g.*, Ex. H at 24:23-27 (Google patent stating
 4 “form of hysteresis **to prevent the rapid cycling of the HVAC system**”); Ex. I at 16:53-59
 5 (Google patent stating: “Although some HVAC components, such as many AC compressors, have
 6 a built in “lock out” feature that **prevents rapid cycling**, not all components have such protection.
 7 ... In such cases the delay such as in steps 812 and/or 816 are useful in **preventing rapid cycling**
 8 **of HVAC** components that are otherwise unprotected.”); Ex. J (Google Nest help search results
 9 for “short cycling”); Ex. K ¶ 88 (ecobee patent application stating “**reduce the short-cycling of**
 10 **HVAC system 20**, which is harder on the equipment and is generally less efficient heating and
 11 cooling”); Ex. L at 4, 5, 6 (ecobee webpage stating “**prevents your equipment from short**
 12 **cycling**” and “**prevents your compressor from short cycling**”).

13 Others besides Google and ecobee also use such terminology in their patents and webpages.
 14 For example, a Carrier patent that names as its inventor Google’s IPR expert, Rajendra K. Shah
 15 (including for its IPR petition challenging the ’890 patent) states: “Some temperature ‘dead band’
 16 or “hysteresis”, such as the exemplary half degree in each direction, is typically applied to **prevent**
 17 **rapid cycling** of the heating or cooling equipment.” Ex. M (Carrier patent) at 1:31-34. As another
 18 example, websites describing HVAC repair and thermostats also commonly use the phrase “rapid
 19 cycling,” as this is a known term in the field of HVAC control. *See, e.g.*, Ex. N (HVAC Repair
 20 Webpage) at 1 (“A serious issue that air conditioners can encounter is ‘**rapid cycling**’ or ‘**short**
 21 **cycling**.’ This is when the compressor ... turns on for only a short period before shutting down
 22 again, long before finishing its cooling cycle. A brief time later, the compressor will turn back on
 23 and start the process over.”); Ex. O (Thermostat Review Webpage) at 7 (comparing Google and
 24 ecobee thermostats and stating that “[t]his sort of **rapid cycling** can reduce energy efficiency”).

25 Such uses of this terminology, including by Google itself, only further demonstrate that the
 26 meaning of “rapid cycling” would be reasonably certain to a POSITA in the field of the ’890
 27 patent. *See* Zeidman Rpt. ¶ 91 (“It is a term commonly used and understood in the field of HVAC
 28 control without requiring any specific numerical limit—as reflected in Google’s own patents, those

of its IPR expert, and a multitude of other patents and webpages relating to HVAC control.”). Dr. Auslander criticizes these examples as “irrelevant” because they do not pre-date the ’890 patent, but he is careful not to say (as it would be untrue) that earlier such examples do not exist. This criticism is especially disingenuous given that Google’s invalidity contentions for the ’890 patent quote the exact phrase “rapid cycling” from a prior art patent issued *nearly 50 years ago*. Ex. Z (Google’s Chart B-17 quoting “rapid cycling” four separate times from U.S. Patent No. 3,864,611). This only further shows the lack of credibility in Dr. Auslander’s opinion that “the term ‘rapid cycling’ is not a standard term of art in the industry.” Auslander Decl. ¶ 58.

Nor does Dr. Auslander offer a credible distinction between “rapid cycling” and “short cycling,” the latter of which Dr. Auslander admits “is a term of art understood by a POSITA.” *See id.* ¶ 57. With no explanation or evidence, Dr. Auslander offers only this sentence: “In contrast, the term ‘rapid cycling’ is not a term of art that would be understood by a POSITA to have the same meaning as ‘short cycling.’” *Id.* He does not, for example, even attempt to explain away the HVAC repair webpage cited by Mr. Zeidman that characterizes them as interchangeable terms. *See* Ex. N at 1 (HVAC repair webpage stating: “A serious issue that air conditioners can encounter is ‘**rapid cycling**’ or ‘**short cycling**.’ **This** is when the compressor, the core of the cooling power in an AC and the component that requires the most power to run, turns on for only a short period before shutting down again, long before finishing its cooling cycle.”).

Finally, it bears noting this same indefiniteness argument was made in the ecobee Action involving the same ’890 patent, including with a supporting expert declaration from Dr. Auslander. The court rejected that argument and adopted EcoFactor’s proposal of “No construction necessary; plain and ordinary meaning,” which is the same proposal EcoFactor offers here.

F. “setpoint” terms (’597 patent, claims 1, 9, 17)

EcoFactor’s Proposed Construction	Google’s Proposed Construction
a temperature setting for a thermostat to achieve or maintain	Indoor temperature value for a thermostat to achieve and maintain

EcoFactor’s proposal is identical to the “setpoint” construction that the parties previously agreed to in *three other cases*. *See* Ex. U (-00075 JCCS) at 1; Ex. T (1185 JCCC) at 2; Ex. R (1258 JCCC) at 1. For example, in the 1185 Investigation involving U.S. Patent No. 10,018,371—which

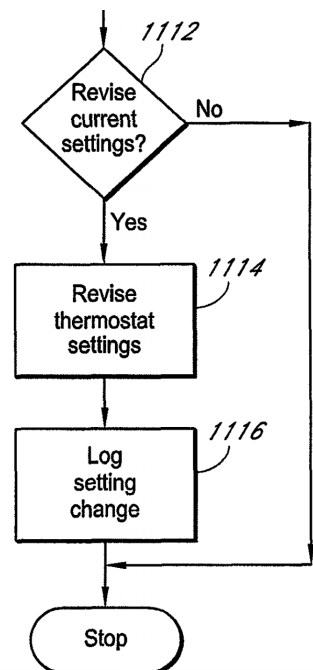
is a continuation of and shares the same specification and certain claim language (including “setpoint”) as the ’597 patent—Google agreed that “setpoint” means exactly what EcoFactor proposes here. Ex. T (1185 JCCC) at 2. The same is true for the 1258 Investigation, where Google agreed to the same meaning of “setpoint” for U.S. Patent No. 8,596,550, which is the parent of the ’597 patent and likewise shares the same specification and certain claim language (including “setpoint”). Ex. R (1258 JCCC) at 1. And in the ecobee Action involving the same ’597 patent, the court entered the same agreed construction for “setpoint.” Ex. C (ecobee JCCS). Until now, neither Google nor anyone else disputed the construction of “setpoint” EcoFactor proposes here.

There is no reason for this Court to depart from the parties’ long-standing agreed construction. While Google has identified certain portions of the specification as allegedly supporting its new proposal, these *exact same* specification teachings and figures are found in U.S. Patent Nos. 8,596,550 and 10,018,371 that were at issue in the parties’ prior litigations—where Google agreed to the construction EcoFactor proposes here. Moreover, nothing in the portions of the specification identified by Google indicates that “setpoint” must be limited to an “indoor temperature value,” as Google is now proposing. Neither the specification nor the prosecution history provides any lexicography or disclaimer supporting Google’s proposal.

As Google apparently agreed up until now, the intrinsic evidence is consistent with EcoFactor’s proposal that “setpoint” refers to a “setting”. For example, in describing Figure 8 (excerpted here), the patent explains:

In step 1112 the server determines whether to alter the current setpoint as a result of applying the rules in step 1110. If no setpoint change is indicated, then the server proceeds to step 1118. If a setpoint change is indicated, then in step 1114 the server transmits the setpoint change to the thermostat, and in step 1116 it records that change to one or more databases in overall database structure 300.

’597 patent at 6:63-7:2. As shown in Fig. 8, the patent uses the term “thermostat **settings**” in describing setpoints, which is consistent with EcoFactor’s proposal. Zeidman Rpt. ¶ 96.



It is unclear what Google seeks to accomplish by moving away from its prior agreed construction. To the extent it seeks to limit the scope of a setpoint solely to a temperature value (e.g., 72 degrees F), a POSITA would appreciate that setpoints are thermostat settings with time and temperature components (e.g., 72 F from 5-9pm), as Google's patents confirm. *See id*; Ex. P (U.S. Pat. No. 9,552,002) at 4:14-22 (describing temperature and time components of setpoints).

G. "evaluate one or more parameters" terms ('100 patent, claims 1, 9)

EcoFactor's Proposed Construction	Google's Proposed Construction
No construction necessary; plain and ordinary meaning.	Indefinite

Google fails to acknowledge the clarity provided by the claim language itself and the specification, which provide reasonable certainty to a POSITA as to the scope and meaning of these claim terms. *See Zeidman Rpt.* ¶¶ 99-105. This Court should rule the same way that Texas court did in the *ecobee* Action, where Dr. Auslander's indefiniteness argument was rejected.

Focusing first on the claims themselves, the surrounding claim language provides certainty as to the scope of claims 1 and 9. *See Phillips*, 415 F.3d at 1314. Claim 1 recites "a computer processor in communication with said thermostatic controller, the processor configured to: ... evaluate one or more parameters including at least the outside temperature measurements and the predicted rate of change, and to determine whether to adopt said first interval or said second interval based upon the values of said parameters." '100 patent at cl. 1 (further clarifying that the rate of change is predicted using stored inside temperature measurements and outside temperature measurements). This claim language indicates which parameters (at least) are evaluated and how the result of the evaluation must be used. It also confirms that computer hardware performs the evaluation and determination. The same is true for claim 9.

Such contextual claim language is also consistent with the specification, including portions of column 8 and Figure 7 referenced by Dr. Auslander. *See Auslander Decl.* ¶ 95; '100 patent at 8:39-9:44, Fig. 7, 8a, 8b, 8c. For example, the specification explains:

FIG. 7 shows a flowchart illustrating the steps required to initiate a compressor delay adjustment event. In step 1102, server 106 retrieves parameters such as weather conditions, the current price per kilowatt-hour of electricity, and the state of the electric grid in terms of supply versus demand for the geographic area that includes a given home. In step 1104 server 106 determines whether to instantiate the compressor delay adjustment program for certain homes in response to those

conditions. In step 1106, server 106 determines whether a specific home is subscribed to participate in compressor delay events. If a given home is eligible, then in step 1108 the server retrieves the parameters needed to specify the compressor delay routine. These may include user preferences, such as the weather, time of day and other conditions under which the homeowner has elected to permit hysteresis band changes, the maximum length of compressor delay authorized, etc. In step 1110 the appropriate compressor delay settings are determined, and in step 1112 the chosen settings are communicated to the thermostat.

'100 patent at 8:39-57. With reference to three figures, the patent "illustrate[s] how changes in compressor delay settings affect HVAC cycling behavior by plotting time against temperature." *Id.* at 8:58-60; *see also id.* at 8:60-9:44. For example, Figure 8(c) "shows how the same compressor delay [as in Fig. 8(b)] can result in different thermal cycling with different weather conditions," where "[t]he greater the amount by which outside temperature exceeds inside temperature in the air conditioning context, the more rapidly the inside temperature will increase during an off cycle, and the slower the air conditioner will be able to cool during the on cycle." *Id.* at 9:31-37.

A POSITA would understand the relationship between outside temperature and predicted rate of change, and their impact on compressor delay settings, in light of such teachings. Zeidman Rpt. ¶ 103. Knowing the outside temperature and the predicted rate of change of inside temperature in response to outside temperature changes allows inside temperature to be predicted for different circumstances. *Id.* Evaluating such information, a delay interval can be more intelligently selected because factors such as extreme outside temperatures or a high predicted rate of change impacts the selection of an appropriate delay interval for a given HVAC system. *Id.* In light of the claims and specification, the scope of claims 1 and 9 would be reasonably certain to a POSITA.

Google's expert, Dr. Auslander, repeats the same arguments he raised in the ecobee Action for the "evaluate" terms, which were rejected in favor of the same proposal EcoFactor offers here. Ex. DD (3/21/22 Preliminary Constructions). Here, Dr. Auslander also presents three new arguments for finding indefiniteness, which raises the question of why he did not include them in his earlier declaration (for which there was no page limit) but now believes they prove indefiniteness by clear and convincing evidence. Such inconsistency suggests a lack of credibility.

In any event, Dr. Auslander's three new opinions are no more persuasive than those previously rejected in the ecobee Action. *First*, Dr. Auslander argues that the "evaluate" claim terms cannot be understood because they recite evaluating "*one* or more parameters including at

1 least” *two* different parameters, “the outside temperature measurements and the predicted rate of
 2 change.” *See* Auslander Decl. ¶ 92. Specifying two parameters that must be evaluated provides
 3 more than reasonable certainty, and that certainty is not compromised by the phrase “one or more
 4 parameters.” *Second*, Dr. Auslander contends that “to ‘evaluate’ the outside temperature
 5 measurements and the predicted rate of change must be something other than *using* the outside
 6 temperature measurements to predict a rate of change of temperatures.” *Id.* ¶ 94. It is unclear why
 7 he believes this proves indefiniteness, as EcoFactor is not aware of any assertion that the “evaluate”
 8 and “use” claim terms refer to the same thing. *Third*, Dr. Auslander asserts that “use of the term
 9 ‘parameters’ to describe ‘outside temperature measurements’ is strange” because, in his view, “the
 10 term ‘parameter’ means values that are kept constant for the purposes of the equation or
 11 calculation.” *Id.* ¶ 96. This extrinsic evidence does not matter because the claims and specification
 12 consistently refer to outside temperature as a “parameter,” resulting in no lack of clarity. *See, e.g.,*
 13 ’100 patent at 8:40-44 (“In step 1102, server 106 retrieves *parameters* such as *weather*
 14 *conditions*”); *id.* at 8:49-55 (“[I]n step 1108 the server retrieves the *parameters* needed to specify
 15 the compressor delay routine. These may include...the weather ...”).

16 Besides these new arguments, Dr. Auslander repeats his argument from the *ecobee* Action
 17 that the claims do not identify “what kind of evaluation is to be performed, let alone how to perform
 18 such an evaluation.” Auslander Decl. ¶ 93. While claims 1 and 9 are broad enough to cover
 19 multiple methods of evaluating, long-standing precedent makes clear that “***a claim is not indefinite***
 20 ***just because it is broad.***” *Niazi Licensing*, 30 F.4th 1339, slip op. at 11; *BASF*, 875 F.3d at 1367
 21 (“***breadth is not indefiniteness***”); *SmithKline Beecham*, 403 F.3d at 1341 (same quotation). The
 22 inventor was entitled to claim the full scope of his invention. It is unclear what information Google
 23 believes was necessary to include in the claims, but extraneous details not needed to understand
 24 the scope of the claims cannot support a finding of indefiniteness. *See, e.g., Via Vadis, LLC v.*
 25 *Blizzard Ent., Inc.*, 815 F. App’x 539, 544 (Fed. Cir. 2020); *S3 Inc. v. NVIDIA Corp.*, 259 F.3d
 26 1364, 1371 (Fed. Cir. 2001).

H. Preambles of '597 patent ('597 patent, claims 1, 9, 17)

EcoFactor's Proposed Construction	Google's Proposed Construction
No construction necessary; plain and ordinary meaning; not limiting	The preambles are limiting

Google identified no evidence that the preambles are limiting (*see* Dkt. No. 70-1 at 7), including no disclaimer in the intrinsic record. Under controlling law, this creates a presumption that the preambles are not limiting. *E.g.*, *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (preambles not limiting absent “clear *reliance* on the preamble during prosecution to *distinguish* the claimed invention from prior art”).

“A preamble is *not limiting* ‘where a patentee defines a *structurally complete* invention in the claim body and uses the preamble only to state a *purpose or intended use* for the invention.’” *Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 770 (Fed. Cir. 2018); *Arctic Cat Inc. v. GEP Power Prod., Inc.*, 919 F.3d 1320, 1327 (Fed. Cir. 2019). Here, the body of claims 1, 9, and 17 includes a complete recitation of structural elements (e.g., thermostatic controller, HVAC system, computer, database) and does not rely on the preamble for antecedent basis.

Each preamble merely recites a “purpose or intended use” of the claimed invention, which makes it non-limiting under Federal Circuit law. The preamble of claim 1 recites “A method *for* detecting manual changes to the setpoint for a thermostatic controller,” listing an intended use after the word “for.” *Id.* Even this intended use is already reflected in the claim body itself, which recites “detecting a manual change to the first automated setpoint.” *Id.* The same is true for claims 9 and 17, which include preambles specifying intended uses after the word “for” and, in any event, already include language in the claim body reflecting such intended uses (“changing the second automated setpoint at the second time based on at least one rule for the interpretation of the manual change” and “detect a manual change to the one or more automated setpoints”). *Id.* at cls. 9, 17.

VII. CONCLUSION

For the reasons above, EcoFactor's proposed constructions should be adopted.

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Respectfully submitted,

RUSS AUGUST & KABAT

By: /s/ Reza Mirzaie

Reza Mirzaie

Marc A. Fenster

Kristopher R. Davis

James N. Pickens

Minna Y. Chan

Jason M. Wietholter

Attorneys for Defendant/Counterclaim Plaintiff
ECOFACOR, INC.

RUSS, AUGUST & KABAT

CERTIFICATE OF SERVICE

I certify that this document is being served upon counsel of record for Defendant on May 3, 2022 via electronic service.

/s/ Reza Mirzaie

RUSS, AUGUST & KABAT